



AlphaServer ES40

Rackmount System Installation Guide

Order Number: EK-ES240-RG. A01

This guide is intended for service providers and self-maintenance customers who are installing an AlphaServer ES40 system into a rack-mounting cabinet.

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Preface

Intended Audience

This manual is for service providers or self-maintenance customers who are installing a Compaq AlphaServer ES40 system into a rack-mounting cabinet.

Document Structure

This manual uses a structured documentation design. Topics are organized into small sections, consisting of two facing pages. Topics begin with an abstract that provides an overview of the section, followed by an illustration. The facing page contains procedures.

Description

This document gives instructions for installing an AlphaServer ES40 system into one of the following AlphaServer M-Series cabinets:

- H9A10 M-Series Medium Cabinet
- H9A15 M-Series Tall Cabinet

If you are using a different cabinet, install rack stabilizing feet or provide other means to stabilize the cabinet before installing a system.

A cardboard template is included in your shipment for marking the holes where you will be mounting hardware. If you do not have the template, use the H9A10 or H9A15 M-Series documentation, listed in Table 1, to determine the mounting holes. The M-Series documentation also provides configuration rules.

Additional information on the AlphaServer M-Series cabinets is available on the World Wide Web as follows:

<http://www.digital.com/alphaserver/products/m-series.html>

Table 1 Compaq AlphaServer ES40 Documentation

Title	Order Number
User Documentation Kit	QZ-01BAA-GZ
Owner's Guide	EK-ES240-UG
User Interface Guide	EK-ES240-UI
Basic Installation	EK-ES240-PD
Release Notes	EK-ES240-RN
Documentation CD (6 languages)	AG-RF9HA-BE
Maintenance Kit	QZ-01BAB-GZ
Service Guide	EK-ES240-SV
Service Guide HTML Diskette	AK-RFXDA-CA
Illustrated Parts Breakdown	EK-ES240-IP
Loose Piece Items	
Rackmount Installation Guide	EK-ES240-RG
Rackmount Installation Template	EK-ES4RM-TP
Cabinet Documentation	
H9A10 M-Series Cabinet Illustrated Parts Breakdown	EK-H9A10-IP
H9A15 M-Series Cabinet Illustrated Parts Breakdown	EK-H9A15-IP

Chapter 1

Installing a System into a Cabinet

This chapter gives procedures for installing an AlphaServer ES40 rackmount system into a cabinet.



WARNING: The system is very heavy. Do not attempt to lift it manually. Use a material lift or other mechanical device to lift the system. At least two people are required to perform the installation.

You need the following tools for the installation:

#2 Phillips screwdriver

5/16-inch hex socket

Extension bar for socket

5/64-inch Allen head wrench

2.5 mm Allen head wrench

Material lift or lift table

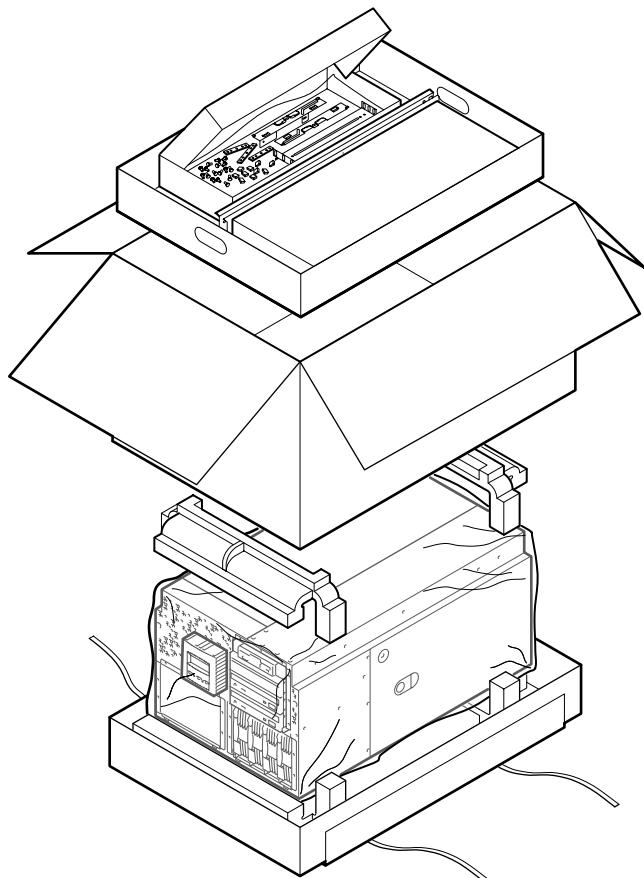
1.1 Shipment Contents

Remove the accessories box, then lift the cardboard from the system.



WARNING: Use a material lift or other mechanical device to move the system to the work area.

Figure 1-1 Unpacking the System



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Check the contents of the accessories box against the list in Table 1–1.

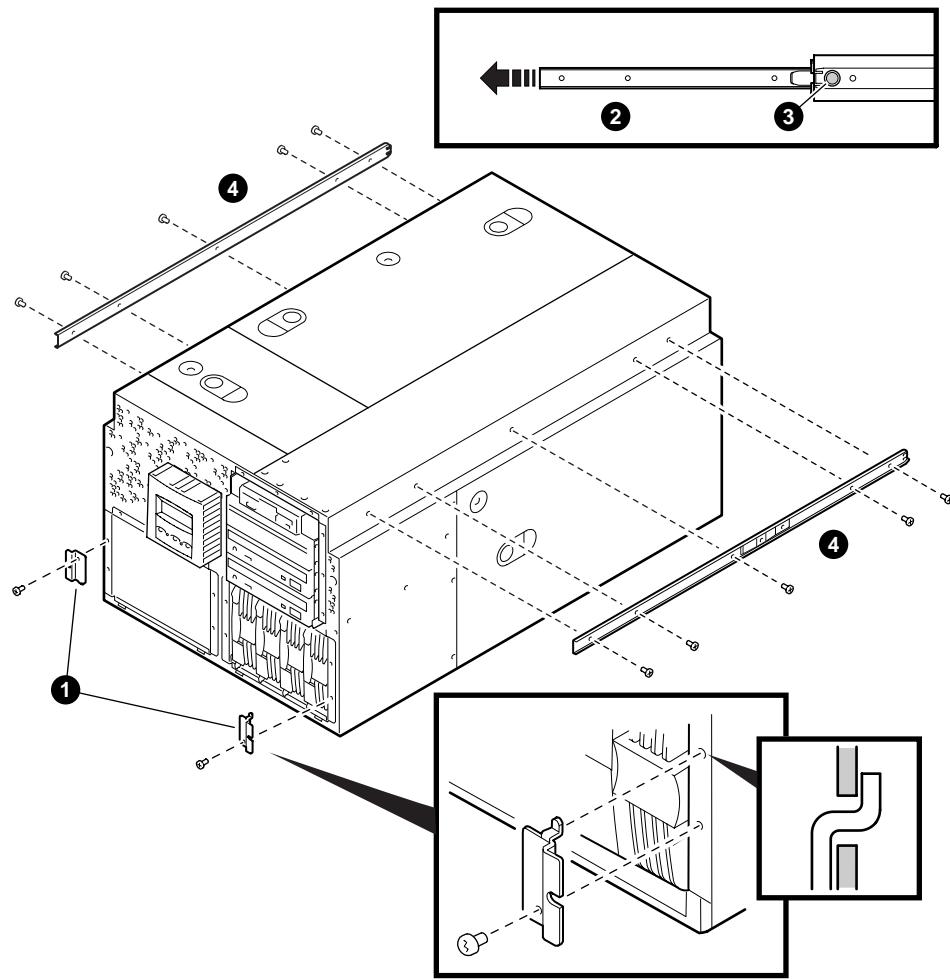
Table 1–1 Accessories List

	Part Number	Quantity
Accessories for Mounting		
Front bezel assembly	70-40129-01	1
Ball bearing slides	12-49881-01	1 set
Cable management arm	70-40177-01	1
Pivot rod stabilizer bracket	74-48996-01	1
Actuator latch	74-48997-04	1
Poly bag with mounting hardware (see below)		1
Mounting Hardware		
Slide brackets	74-53563-01	4
Front mounting brackets	74-53924-01	2
10-32, 5-hole nut bar	74-51531-01	2
10-32, 8-hole nut bar	74-46418-01	2
10-32 x 0.5 hex head screws	90-00061-44	16
10-32 U-nuts	90-07786-00	2
M4 kepnuts	90-40203-02	8
M4 x 10 mm socket button head cap screw	N/A	18
M3 x 10 mm pan head Phillips screw	90-09984-21	2
Plastic cable clamp	N/A	1

1.2 Attaching Mounting Brackets to the System

To prepare the system for installation, attach mounting brackets.

Figure 1-2 Attaching Mounting Brackets and Slides



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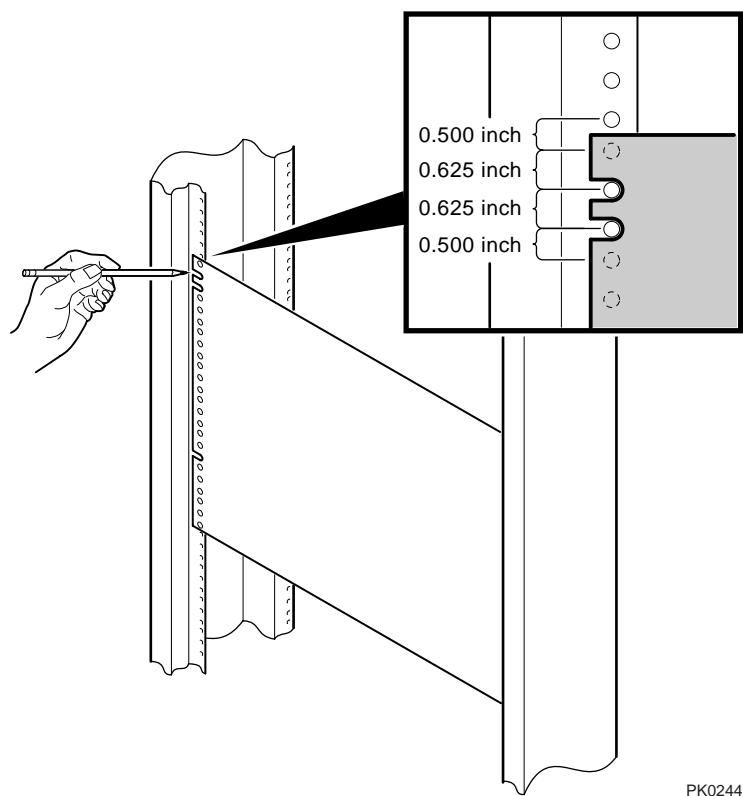
CAUTION: The slides are lightly greased. Handle them carefully to avoid soiling your clothing.

1. Attach a front mounting bracket **1** along each edge, using one hex screw per bracket.
Make sure that on the right side, the tab on the bracket faces up and on the left side, it faces down.
2. Pull the narrow segment of the slide **2** out and detach it completely by pressing the green release button **3** and continuing to pull.
3. Attach the narrow segment of the slide to the system with five cap screws **4**.
4. Repeat the procedure for the other slide.

1.3 Marking the Cabinet Installation Area

Use the cardboard template to mark the holes where you will be mounting the hardware.

Figure 1-3 Hole Pattern



The installation of the rackmount system requires 14 inches (8U) of vertical height in the cabinet.

NOTE: If you do not have the cardboard template, see the AlphaServer M-Series cabinet documentation for hole numbers and instructions.

Mark the Front of the Cabinet

1. Starting at the front of the cabinet, match the hole pattern.
2. Mark the six holes where you will be mounting hardware.
3. Turn the template over to mark the back of the system.

Mark the Back of the Cabinet

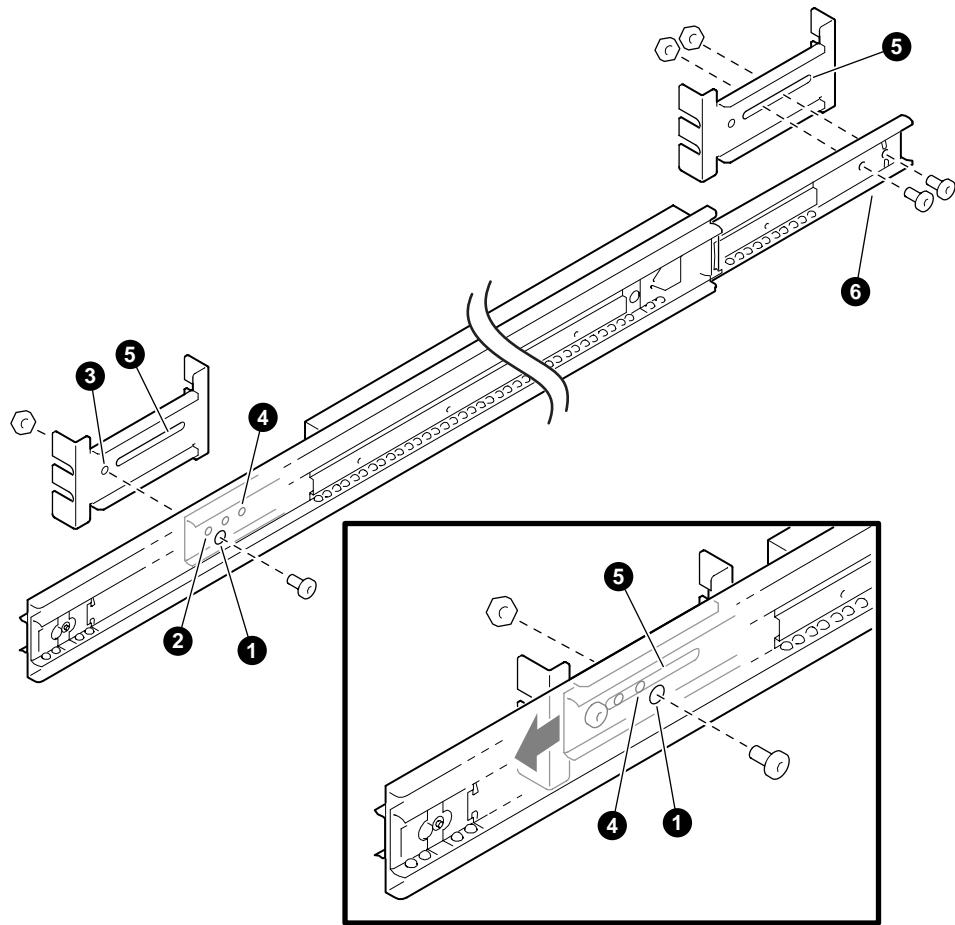
4. Make sure the first hole you mark on the back is at the same vertical location as the first hole you marked on the front.
5. Mark the eight holes where you will be mounting hardware.

CAUTION: After using the template to mark the holes, check your work. Count the holes to make sure you marked them correctly.

1.4 Attaching Slide Brackets to Slides

Attach slide brackets to the slides.

Figure 1-4 Attaching Slide Brackets to Slides



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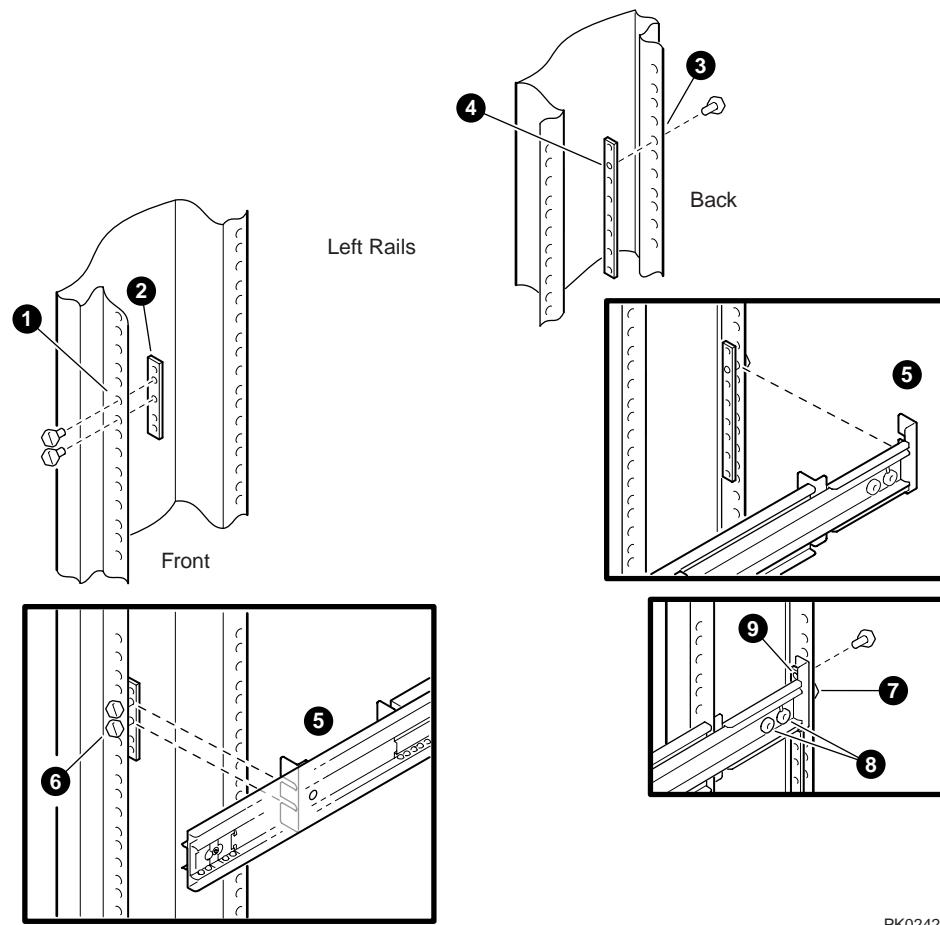
The sliding segment of the slide has an access hole **1** that provides access to three mounting holes in the stationary segment. You use two of the mounting holes.

1. Insert a cap screw through the access hole and the first (forward-most) mounting hole **2** in the slide and through the hole **3** in the slide bracket. Fasten with one kepnut and tighten.
2. Align the access hole with the third mounting hole in the slide.
3. Insert a cap screw through the access hole and the third hole **4** in the slide and through the slot **5** in the slide bracket. Fasten with one kepnut and tighten.
4. The slide bracket at the other end mounts with the hole facing forward. (The hole is not used.) Insert a screw through each of the holes **6** in the stationary segment of the slide and through the slot **5** in the slide bracket. Attach loosely with kepnuts.
5. Repeat steps 1 through 4 on the other slide bracket.

1.5 Preparing the Cabinet

Prepare the cabinet by attaching slides to the cabinet rails.

Attaching Slides to Left Cabinet Rails

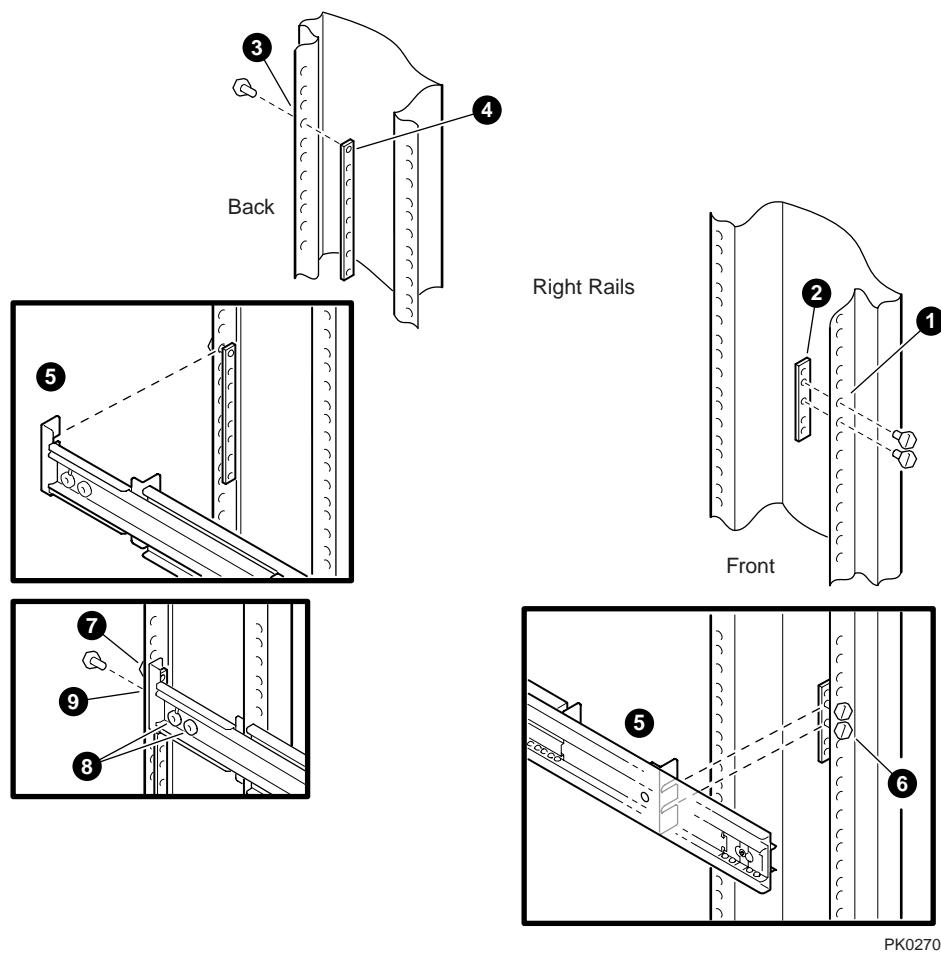


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Attaching Slides to Left Rails

1. On the front left of the cabinet, insert two hex screws through the uppermost holes **1** marked on the cabinet rail. Start them into the second and third holes from the top of a 5-hole nut bar **2**.
2. On the back, insert one hex screw through the second marked hole **3** on the cabinet rail. Start it into the second hole **4** of an 8-hole nut bar.
3. Install a slide bracket between the cabinet rails and the nut bars. **5**
4. On the front of the cabinet, tighten the two hex screws **6**.
5. On the back, tighten the hex screw **7**. Also tighten the two cap screws **8** holding the slide to the slide bracket.
6. On the back, insert one hex screw into the top marked hole **9**. Tighten into the nut bar.
7. On the front, clip a U-nut over the remaining marked hole.
8. See the next two pages for the procedure for the right rails.

Figure 1–5 Attaching Slides to Right Cabinet Rails



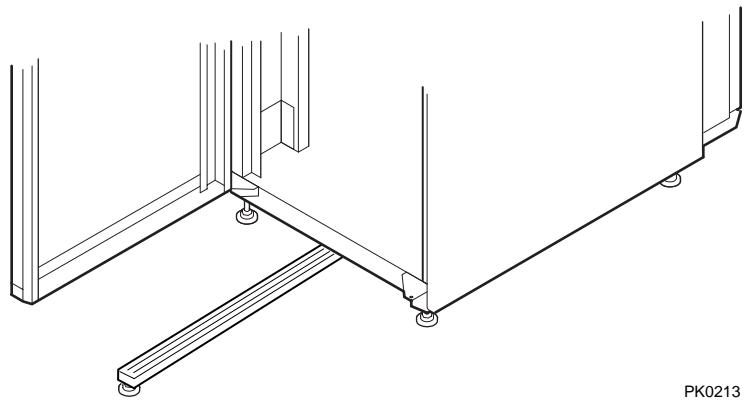
Attaching Slides to Right Rails

1. On the front right of the cabinet, insert two hex screws through the uppermost holes **1** marked on the cabinet rail. Start them into the second and third holes from the top of a 5-hole nut bar **2**.
2. On the back, insert one hex screw through the top hole **3** marked on the cabinet rail. Start it into the top hole **4** of an 8-hole nut bar.
3. Install a slide bracket between the cabinet rails and the nut bars **5**.
4. On the front, tighten the two hex screws **6**.
5. On the back, tighten the hex screw **7**. Also tighten the two cap screws **8** holding the slide to the slide bracket.
6. On the back, insert one hex screw into the second marked hole down **9**. Tighten into the nut bar.
7. On the front, clip a U-nut over the remaining marked hole.

1.6 Stabilizing the Cabinet

Stabilize the cabinet before installing the system.

Figure 1-6 Activating the Stabilizer Foot



The system is intended for installation in one of the following cabinets, which are equipped with a stabilizer bar:

- H9A10 M-Series Medium Cabinet
- H9A15 M-Series Tall Cabinet

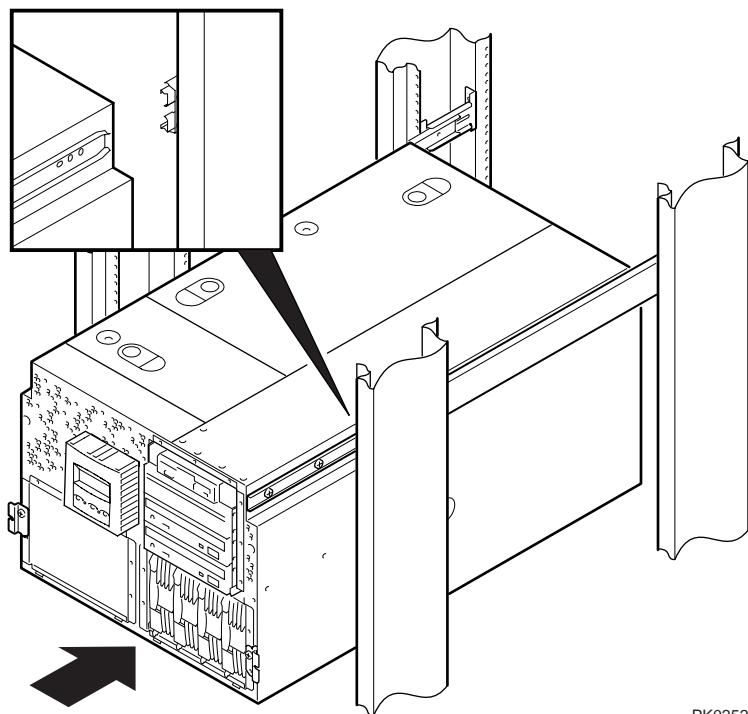
Pull out the stabilizer bar and extend the leveler foot to the floor before installing the system.

If you are using a cabinet other than those listed above, install rack stabilizing feet or provide other means to stabilize the cabinet before installing the system.

1.7 Installing the System

Use a material lift or other mechanical device to install the system.

Figure 1-7 Installing the System



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WARNING:

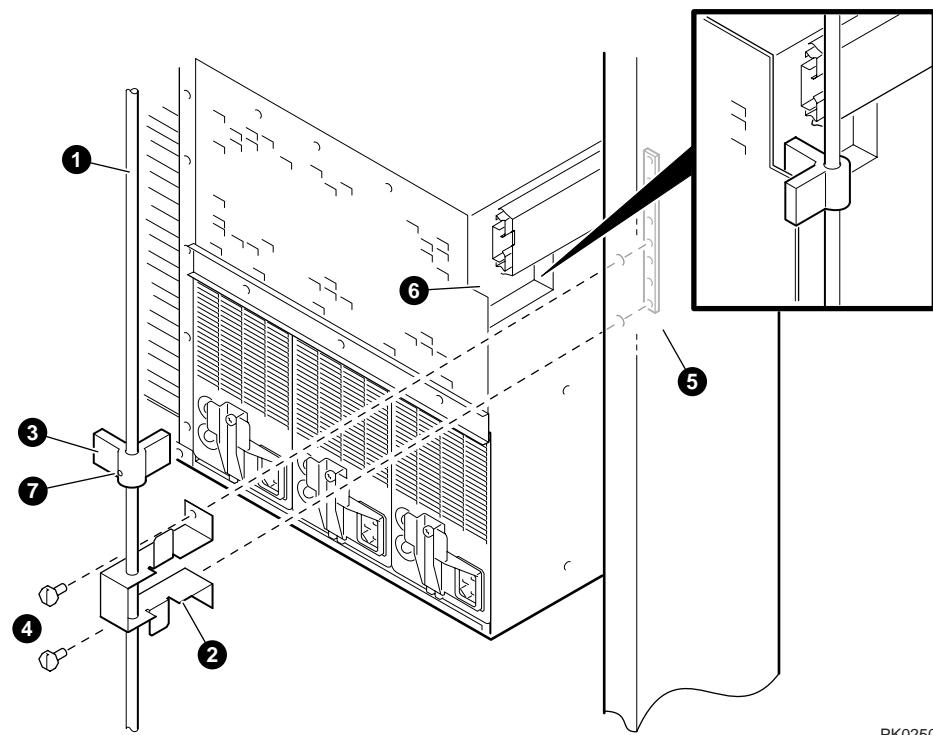
1. Make sure that all other hardware in the cabinet is pushed in and attached.
 2. The system is very heavy. Do not attempt to lift it manually. Use a material lift or other mechanical device.
-

1. Align the narrow segment of the slides attached to the system with the slides attached to the cabinet.
2. Depress the green release button on each side and slide the system completely into the cabinet.

1.8 Installing the Interlock System

The interlock system ensures cabinet stability by allowing only one system drawer at a time to be pulled out of the cabinet. The stabilizer bracket and actuator latch only work in a cabinet equipped with the interlock system.

Figure 1–8 Installing the Interlock System



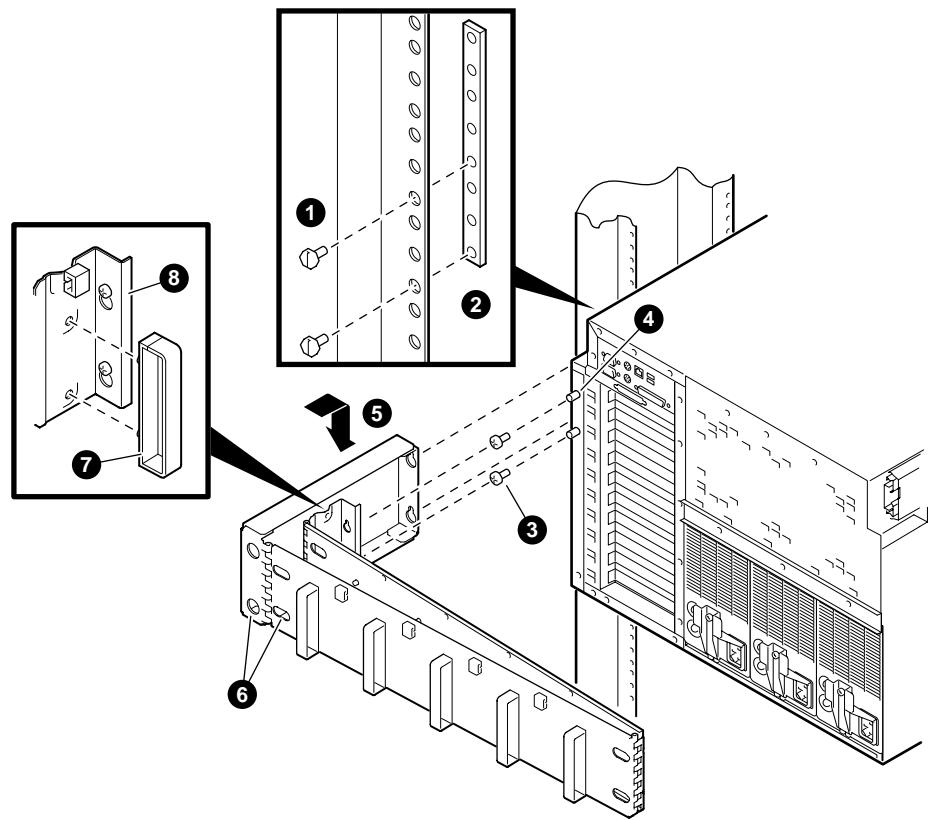
CAUTION: If you are installing a cabinet that does not have the interlock system, you must ensure cabinet stability by installing rack stabilizing feet or by some other means.

1. At the back of the cabinet, release the vertical bar **1** of the interlock system.
2. Insert the stabilizer bracket **2** and the actuator latch **3** into the vertical bar so that the actuator latch is above the stabilizer bracket.
3. Reinstall the vertical bar.
4. Secure the stabilizer bracket to the two remaining marked holes on the right cabinet rail with two hex screws **4**. Tighten into the nut bar **5**.
5. Vertically position the actuator latch **3** such that the trip mechanism **6** in the system aligns with the actuator latch.
6. Rotate the actuator latch to orient it like the other actuator latches on the vertical bar.
7. Tighten the Allen screws **7** on the actuator latch.

1.9 Installing the Cable Management Arm

Attach the cable management arm to the rear rails of the cabinet.

Figure 1–9 Installing the Cable Management Arm



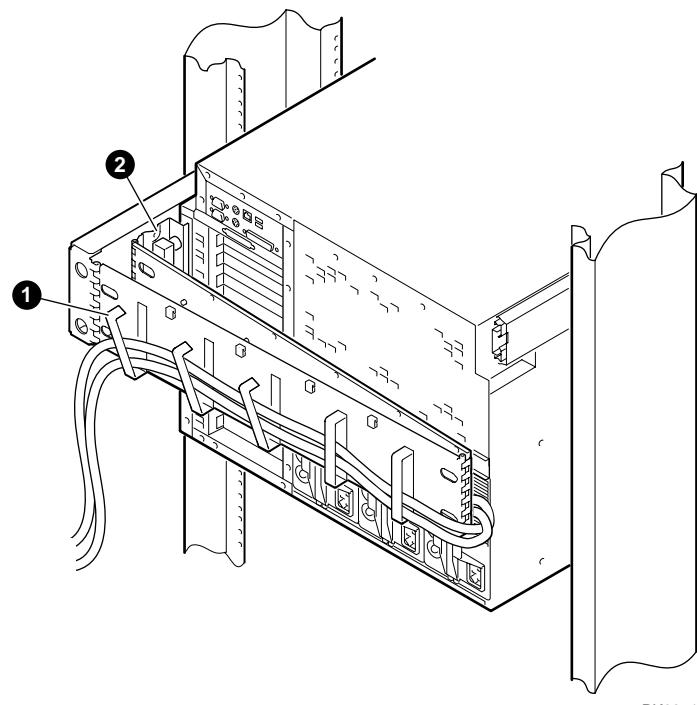
NOTE: Be sure that you have attached all cables to the rear of the unit before installing the cable management arm.

1. Attach all cables to the rear of the unit.
2. Start two hex screws **1** into the two remaining marked holes on the left cabinet rail and into the 8-hole nut bar **2**.
3. Start two pan head screws **3** into the rear standoffs **4** on the system.
4. Place the cable management arm **5** over the four screws and lower it into place.
5. Tighten the four screws through the access holes **6**.
6. Snap the cable clamp **7** into the member **8** of the cable management arm that is attached to the rear of the system.

1.10 Dressing the Cables

Dress the cables through the cable clamps on the cable retractor assembly at the rear of the system.

Figure 1-10 Dressing the Cables



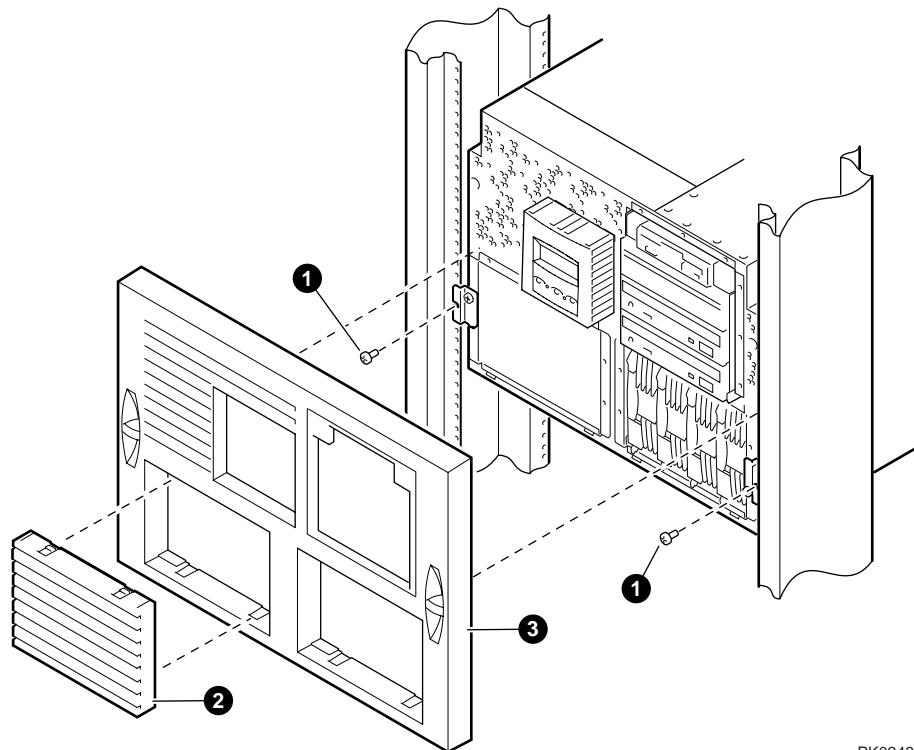
1. Dress the cables through the cable clamps **①** or tie wrap them to the cable retractor assembly.
2. Attach all cables to the member of the cable management arm **②** that is attached to the system.

CAUTION: Failure to attach the cables to the attached member of the management arm can cause cables to become disconnected.

1.11 Attaching the Front Bezel

To complete the installation, attach the front bezel.

Figure 1-11 Attaching the Front Bezel



1. Attach the system to the cabinet rails with a hex screw **1** on each side.
2. If your system has a second disk cage, remove the filler bezel **2** from the front bezel **3**.
3. Align the front bezel with the front of the system and snap it into place.

